NORTH CAROLINA DIVISION OF **AIR QUALITY**

Application Review

Issue Date: DRAFT

Region: Washington Regional Office

County: Wayne

NC Facility ID: 9600058

Inspector's Name: Robert Bright **Date of Last Inspection:** 08/31/2017

Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Georgia-Pacific Wood Products LLC - Dudley

Plywood/CNS Plant

Facility Address:

Georgia-Pacific Wood Products LLC - Dudley Plywood/CNS Plant

139 Brewington Road Dudley, NC 28333

SIC: 2436 / Softwood Veneer And Plywood

NAICS: 321212 / Softwood Veneer and Plywood Manufacturing

Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02Q .0501(c)(2)

NSPS: N/A NESHAP: N/A PSD: N/A

PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A

Contact Data

Facility Contact Authorized Contact Brandy Long Michael Golden Complex Environmental Plywood Plant Manager Manager (919) 736-4385 (919) 705-0526 138 Brewington Road 139 Brewington Road Dudley, NC 28333 Dudley, NC 28333

Technical Contact

Brandy Long Complex Environmental Manager (919) 705-0526 139 Brewington Road

Dudley, NC 28333

Application Type: Modification **Application Schedule:** TV-Sign-501(c)(2) Part II **Existing Permit Data**

Date Received: 05/31/2017

Application Number: 9600058.17B

Existing Permit Number: 09268/T23 **Existing Permit Issue Date:** 11/03/2017 **Existing Permit Expiration Date:** 09/30/2019

Application Data

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	voc	СО	PM10	Total HAP	Largest HAP
2016	21.48	159.91	503.19	662.22	142.46	65.54	31.19 [Methanol (methyl alcohol)]
2014	32.08	340.64	327.34	795.15	265.78	39.74	22.23 [Methanol (methyl alcohol)]
2013	23.06	256.61	313.61	586.94	188.33	37.09	21.20 [Methanol (methyl alcohol)]
2012	23.43	249.08	307.26	572.02	186.27	37.34	21.32 [Methanol (methyl alcohol)]

Review Engineer: Kevin Godwin **Comments / Recommendations:**

Issue 09268/T24

Review Engineer's Signature: Date: DRAFT Permit Issue Date: DRAFT

Permit Expiration Date: 09/30/2019

I. Introduction and Purpose of Application

This permit action is for Part II of a two-step process allowed under 15A NCAC 02Q .0501(c)(2). The Rule states:

- (c) With the exception in Paragraph (d) of this Rule, the owner or operator of an existing facility, new facility, or modification of an existing facility (except for minor modifications under Rule .0515 of this Section), including significant modifications that would not contravene or conflict with a condition in the existing permit, subject to the requirements of this Section shall not begin construction without first obtaining:
 - (1) a construction and operation permit following the procedures under this Section (except for Rule .0504), or
 - (2) a construction and operation permit following the procedures under Rule .0504 and filing a complete application within 12 months after commencing operation to modify the construction and operation permit to meet the requirements of this Section.

The Permittee obtained a construction and operation permit on August 1, 2016. According to the application, the permitted projects were implemented in December 2016. This Part II application was submitted within 12 months after commencing operation. The technical review for the Part I application is attached to this document.

II. Application Chronology

Part II application received May 31, 2017
Draft to applicant and regional office February 5, 2018
Draft to public notice and EPA XX

III. Other Regulatory Requirements

- An application fee of \$929.00 is required and was received by DAQ.
- The appropriate number of application copies was received on May 31, 2017.
- The application was signed by Mr. Michael Golden, Plywood Plant Manager, on May 18, 2017.

IV. Draft/Proposed Permit Review Summary

- Mr. Robert Bright (WARO) was provided a draft permit for review on February 5, 2018. Mr. Bright responded with no comments on February 12, 2018.
- Ms. Brandy Turley (GP Dudley) was provided a draft permit for review on February 5, 2018. Ms. Turley responded with no comments on February 5, 2018.
- NCDAQ published a Public Notice of the proposed Title V permit revision on DAQ website on XXXXX.
- EPA, Region 4 was provided a draft permit for review on XXXXX.

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above.

V. Recommendations

This permit application has been reviewed by the DAQ to determine compliance with all procedures and requirements. The DAQ has determined that this facility is expected to achieve compliance as specified in the permit with all applicable requirements. The DAQ recommends XXXXX.

NORTH CAROLINA DIVISION OF **AIR QUALITY**

Air Permit Review

Permit Issue Date: August 1, 2016

Region: Washington Regional Office

County: Wayne

NC Facility ID: 9600058

Inspector's Name: Robert Bright **Date of Last Inspection:** 09/11/2015

Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Georgia-Pacific Wood Products LLC - Dudley

Plywood/CNS Plant

Facility Address:

Georgia-Pacific Wood Products LLC - Dudley Plywood/CNS Plant

139 Brewington Road Dudley, NC 28333

SIC: 2436 / Softwood Veneer And Plywood

NAICS: 321212 / Softwood Veneer and Plywood Manufacturing

Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V

Permit Applicability (this application only)

SIP: N/A NSPS: N/A

NESHAP: Subpart DDDD **PSD:** 15A NCAC 02D .0530(u)

PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A

	Contact Data		Application Data
Facility Contact Brandy Long Complex Environmental Manager (919) 705-0526 139 Brewington Road	Authorized Contact Michael Golden Plywood Plant Manager (919) 736-4385 138 Brewington Road Dudley, NC 28333	Technical Contact Brandy Long Complex Environmental Manager (919) 705-0526 139 Brewington Road	Application Number: 9600058.16A Date Received: 04/08/2016 Application Type: Modification Application Schedule: TV-Sign-501(c)(2) Part I Existing Permit Data Existing Permit Number: 09268/T20 Existing Permit Issue Date: 09/14/2015
Dudley, NC 28333		Dudley, NC 28333	Existing Permit Expiration Date: 09/30/2019

Total Actual	emissions	in	TO	NS	/YEAR:

CY	SO2	NOX	voc	СО	PM10	Total HAP	Largest HAP
2014	32.08	340.64	327.34	795.15	265.78	39.74	22.23 [Methanol (methyl alcohol)]
2013	23.06	256.61	313.61	586.94	188.33	37.09	21.20 [Methanol (methyl alcohol)]
2012	23.43	249.08	307.26	572.02	186.27	37.34	21.32 [Methanol (methyl alcohol)]
2011	22.92	247.27	288.28	552.48	173.07	43.48	26.33 [Methanol (methyl alcohol)]
2010	22.07	227.82	257.26	524.09	152.39	41.00	24.33 [Methanol (methyl alcohol)]

Review Engineer: Kevin Godwin

Comments / Recommendations:

Issue 09268/T21

Permit Issue Date: 08/01/2016 Permit Expiration Date: 09/30/2019

Review Engineer's Signature:

Date:

I. Introduction and Purpose of Application

- A. Georgia-Pacific Wood Products LLC (GP) operates a Chip-N-Saw (CNS) plant and a Plywood manufacturing plant at this Dudley, Wayne County site. GP is submitting this application for the modification of sources at the Plywood manufacturing operations. The proposed project does not affect CNS operations.
- B. This permit action is for the following projects/requests:
 - 1. rebuild Veneer Dryer #2 (ES-VD2),
 - 2. reskin Veneer Dryer #3 (ES-VD3),
 - 3. replace Veneer Dryer #1 and #4 (ES-VD1 and ES-VD4) coils and steam traps,
 - 4. install new programmable logic controller (PLC) for the presses,
 - 5. upgrade lathes (IF-LA),
 - 6. add a Veneer Conditioning Chamber (IF-VCC),
 - 7. modify the stream distribution system to utilize flash steam to heat the log vats,
 - 8. modify existing language in Section 2.2 C.1.e.i.(C) to more accurately reflect the language in the Plywood and Composite Wood Products (PCWP) MACT (40 CFR 63 Subpart DDDD), recording the average of the firebox temperatures instead of each individual chamber in the regenerative thermal oxidizer (RTO)(ID No. CD-VD), and
 - 9. use results from the January 2010 PCWP MACT compliance test to establish minimum firebox temperature rather than the January 14, 2014 PSD avoidance compliance test.

According to the application, the lathe upgrade (IF-LA), Veneer Dryer #3 reskin (ES-VD3), and addition of Veneer Conditioning Chamber (IF-VCC) are previously permitted, but included here for completeness since they have not been completed and will serve to increase productivity at the facility.

According to the application, the press PLC installation will not result in any emissions increases. The modification to the steam distribution system will not increase emissions as the project will result in a decrease in fuel usage at the boiler due to efficiency gains.

C. Because this modification does involve significant changes to existing monitoring, it is being processed as a significant modification under 15A NCAC 02Q .0516. The applicant has requested the application follow the two-step permitting procedure allowed under 15A NCAC 02Q .0504. This allows one year from commencement of operation to file an amended application to meet the requirements of 02Q .0500.

II. Changes to Existing Air Permit

The following table provides a summary of changes made to the existing permit.

Page No.	Condition/ Item	Description of Change(s)
Throughout	N/A	Change the application number and complete date; Change permit revision number to T21; Change the issuance/effective dates of the permit.
20	2.1 E.6.	Updated CAM condition as recommended by Stationary Source Compliance Branch (SSCB).
47	2.2 C.1.(e)(i)(C)	Included revised language as requested by the Permittee.
52 and 53	2.2 E. 1. and 2.	Included condition referencing recordkeeping and reporting requirement pursuant to 15A NCAC .0530(u). Included condition requiring a complete application 12 months after commencing operation pursuant to 15A NCAC 02Q .0504.
JS	3	Updated General Conditions to most recent shell version (v4.0).

III. Statement of Compliance

The facility was most recently inspected on September 11, 2015 by Mr. Robert Bright of the Washington Regional Office (WARO). According to a memo from Mr. Bright dated April 15, 2016, during the inspection the facility appeared to operate in compliance with all applicable air quality regulations and permit conditions.

IV. Regulatory Review - Specific Emission Source Limitations

Existing Specific Emission Source Limitations found in Section 2.1 are not affected by this modification.

Overview of Emission Factors – The attached spreadsheets summarize emissions from each proposed project. According to the application, emission factors used are based on various sources including:

- Published National Council for Air and Stream Improvements, Inc. (NCASI) technical reports,
- Facility or vendor engineering data,
- U.S. EPA AP-42 Compilation of Air Emission Factors (5th Edition, Revised),
- Factor Information Retrieval Software (FIRE) database,
- Material content data and vapor balance for evaporative sources,
- Permit and regulatory limits, and
- Stack test data

Attached emissions spreadsheets reference the appropriate factors for each project.

V. Regulatory Review – Multiple Emission Source Limitations

A. <u>15A NCAC 02D .0530 "Prevention of Significant Deterioration"</u> – The GP Dudley facility is an existing major stationary source under PSD. The facility is located in Wayne County which is classified as being in attainment with the National Ambient Air Quality Standards (NAAQS). The applicable federal construction permitting program for major sources in the county is PSD.

Projects are evaluated for a significant emissions increase by comparing emissions increases from the project itself to the PSD significant emissions rate (SER). If the project emission increases are less than PSD SERs, then a significant increase does not occur and PSD review is not required. If the increases from the project exceed PSD SERs, then the second step involves determining if there is a significant net emissions increase. As shown in the table below, emission increases associated with the proposed projects are below the PSD SER for all pollutants and PSD review is not required.

As stated in the application, pursuant to 15A NCAC 02D .0530(b)(1)(A), baseline actual emissions (BAE) are the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period ... within the 5-year period immediately preceding the date that a complete application is received by the Division ... The Director shall allow a different time period, not to exceed 10 years immediately preceding the date that a complete application is received by Division, if the owner or operator demonstrates that it is more representative of normal source operation. For this application, GP chose the 24-month period beginning June 2006 and ending at the end of May 2008 as the baseline period, in which the facility produced an annual average of 301,097 thousand square feet (MSF) of plywood. This time period is not within the 5-year lookback period, however, was chosen because it is considered more representative of normal source operation before facility production decreased due to economic conditions.

As spelled out in the application, in developing projected actual emissions the PSD rule specifies that the projected actual emission (PAE) rate shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emission following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the BAE... and that are also unrelated to the particular project, including any increased utilization due to product demand growth. The emissions increase calculated for the project does not include emissions that "could have been accommodated" (CHA) during the baseline period that are unrelated to the projects. According to the application, CHA emissions have been estimated for the units modified by the proposed projects including the dryers, presses, log vats, and debarker by annualizing the maximum monthly production during the baseline period, accounting for typical annual downtime.

According to the application, for the debarker, log vats, and veneer dryers, CHA emissions are determined from the maximum monthly production during the baseline period, May 2008. Since production from the dryers and presses are not always correlated, the maximum monthly production during the baseline period for the presses was August 2006, which was used to calculated CHA emission for the presses. In order to determine the annual production based on the monthly production, the production during the specified months were divided by the days of the month, and were multiplied by the average annual operation of 355 days (which accounts for ten days of downtime for maintenance per year). In order to be excluded from PAE, CHA emissions must also be unrelated to the particular project. Emissions directly related to expected production gain from the proposed changes (22,000 MSF/yr) were not excluded as CHA

emissions. "Excludable emissions" were then calculated as the difference between CHA emissions and BAE.

As stated in the application, 40 CFR 51.166(40)(i), "Projected actual emissions means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emission unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in an significant emissions increase, or a significant net emissions increase at the major stationary source. The Dryer #2 rebuild will not increase the emission unit's design capacity, therefore, it is appropriate to consider emission in the 5 years following the date the dryers resume regular operation. All the modified dryers (ES-VD1, ES-VD2, ES-VD3, and ES-VD4) are considered existing emissions units as described in 40 CFR 51.166(7), and the actual-to-projected actual applicability test for projects that only involve existing emissions units described in 40 CFR 51.166(7)(c) was used to determine emissions increases from the project."

As stated in the application, to determine the projected maximum annual rate, a source must consider all relevant information, including historical operation data, the company's expected business activity and the company's highest projections of business activity for the 5-year period after implementation of the project. For this analysis, post project emissions are projected actual emissions for existing equipment and potential emissions for new equipment (only the previously permitted VCC included here).

According to the application, modifications are being proposed for each of the existing veneer dryers (ES-VD1, ES-VD2, ES-VD3, and ES-VD4). There is expected to be an increase in drying efficiency due to the proposed projects. The rebuild of ES-VD2 will restore the original efficiency and capacity of the dryer, which is expected to result in a 20,000 MSF/yr increase in production. Proposed modifications to the other three dryers will not increase production beyond original design capacity. All of the proposed projects combined are expected to restore 22,000 MSF/yr annual production capacity. Projected production capacity of the dryers post-project completion is expected to be 375,000 MSF/yr on a 3/8" basis for the next five years, which will not exceed the maximum facility design of 438,000 MSF/yr.

Modifications being made to the dryers, presses, debarker, and log vats, and the addition of VCC will impact emission sources upstream and downstream. Emissions increases from the upstream and downstream sources are included as part of the PSD analysis as affected sources. Attached spreadsheets calculate emissions increases based on an increased throughput of 22,000 MSF/yr.

The modification will not result in an increase in throughputs or emissions above the existing BACT limits. According to Specific Condition 2.1 B.3., throughput for the four veneer dryers is limited to 438 million square feet (3/8 inch basis) per consecutive 12-month period. According to Specific Condition 2.1 C.3., throughput for the two plywood presses is limited to 425 million square feet (3/8 inch basis).

Upon this permit revision, a condition referencing the recordkeeping and reporting requirements found in 15A NCAC 02D .0530(u) is included for the modified sources (ID Nos. ES-VD1 through VD4, ES-LSV, IF-LA, F-DBPW and IS-VCC).

15A NCAC 2D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF REOUIREMENTS OF PSD

a. The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements pursuant to application 9600058.16A for the Dryer Rebuild project consisting of the modified sources: (ID Nos. ES-VD1 through VD4, ES-LSV, IF-LA, F-DBPW and IS-VCC).

Monitoring/Recordkeeping/Reporting [15A NCAC 2D .0530(u) and 2Q .0308]

b. The Permittee shall perform the following:

- The Permittee shall maintain records of annual emissions in tons per year, on a calendar year basis
 related to the Dryer Rebuild project, for five years following resumption of regular operations after
 the change is made.
- ii. The Permittee shall submit a report to the director within 60 days after the end of each calendar year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a-c).
- iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
- iv. The reported actual emissions (post-construction emissions) for each of the five calendar years will be compared to the projected actual emissions (pre-construction projection) as included below:

Sample PM10 baseline actual emission (BAE) calculation for the affected sources in the project.

Veneer dryers	Debarker	Presses	Log vats	Veneer conditioning	Miscellaneous sources (Table 3) in application	
25.8 tpy	3.2 tpy	0.7 tpy	0.0 tpy	0.0	0.0 tpy	
Average total = 29.7 tpy						

Sample PM10 projected actual emission (PAE) calculation for the affected sources in the project + PTE (new) + existing source increases.

Veneer dryers	Debarker	Presses	Log vats	Veneer conditioning (new)	Miscellaneous sources (Table 3) in application (existing)		
31.7 tpy	3.9 tpy	0.9 tpy	0.0 tpy	0.18 tpy	4.4 tpy		
Projected act	Projected actual emissions + new = 41.08 tpy						

Sample PM10 excludable emissions (could have accommodated) calculations based on the maximum monthly emissions from June 2006 for the presses and May 2008 for the veneer dryers.

Veneer	Debarker	Presses	Log vats	Veneer	Miscellaneous	
dryers				conditioning	sources (Table 3) in	
				(new)	application (existing)	
3.1 tpy	0.4 tpy	0.1 tpy	0.0 tpy	0.0 tpy	0.0 tpy	
Excludable emissions = 3.6 tpy						

Table 1: The following table taken from the application provides a summary of project emission increases.

Total project	PM (tpy)	PM-10 (tpy)	PM-2.5 (tpy)	CO (tpy)	VOC (tpy)	SO ₂ (tpy)	NOx (tpy)	Lead (tpy)
Total emission increases (with excluding CHA emissions)	9.1	7.8	7.2	28.1	37.2	1.0	8.1	4.4E-03
PSD SER	25	15	10	100	40	40	40	6.0E-01

Table 2: Projected Actual Emissions

Pollutant	Projected Actual Emissions* (tons per year)
PM	49.8
PM_{10}	41.08
$PM_{2.5}$	34.5
VOC	292.0

* These projections are not enforceable limitations. If projected emissions are exceeded, consistent with 15A NCAC 2D .0530, the permit shall include in its annual report an explanation as to why the actual rates exceeded the projection.

Increment Tracking

The PSD minor source baseline date has been triggered in Wayne County for PM-10, SO₂, and NOx. For PSD increment tracking purposes, PM-10 emissions are increased by 1.78 pounds per hour, SO₂ emissions are increased by 0.23 pounds per hour, and NOx emissions are increased by 1.85 pounds per hour as a result of this modification.

B. 15A NCAC 02D .1111 "Maximum Available Control Technology" – The GP Dudley facility is a major source of hazardous air pollutants (HAP) and subject to 40 CFR 63 Subpart DDDD. The facility is classified as an existing affected source. As stated in the application, the proposed modification does not qualify as reconstruction because the fixed capital costs are less than 50% of the cost to build a new plywood plant.

The applicant requests that the current MACT condition found in Section 2.2 C.1.e.i.(C) be changed to more accurately reflect language in Subpart DDDD and to reference the PCWP MACT compliance testing on January 7, 2010 rather than the PSD avoidance compliance testing on January 14, 2014 as follows:

"To ensure compliance with Section 2.2 C.1.e.i.(B) above, the Permittee shall maintain the firebox combustion temperatures (3-hour block average) in the RTO (ID No. CD-VD) at or above the minimum combustion temperatures established during the most recent associated compliance test. The Permittee most recently conducted **PCWP MACT** compliance testing on CD-VD on **January 7**, **2010**. That testing indicated reductions in total HAP emissions of 95 percent **while the average chamber combustion temperature of the three minimum 15-minute firebox temperatures monitored during the three test runs was 1,579 degrees Fahrenheit** (°F)."

Pursuant to 40 CFR 63.2262(k)(1), during the performance test, you must continuously monitor the firebox temperature during each of the required 1-hour test runs. For regenerative thermal oxidizers, you may measure the temperature in multiple locations (e.g., one location per burner) in the combustion chamber and calculate the average of the temperature measurements prior to reducing the temperature data to 15-minute averages for purposes of establishing your minimum firebox temperature. The minimum firebox temperature must then be established as the average of the three minimum 15-minute firebox temperatures monitored during the three test runs. Multiple three-run performance tests may be conducted to establish a range of parameter values under different operating conditions.

Therefore, this request is granted.

C. 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" – This modification will result in an increase in state-only toxic air pollutants (TAP). As stated in the application, all TAP emission rates presented in this application are below the potential to emit (PTE) emission rates submitted in the 2014 renewal application. The modification is not expected to pose an unacceptable health risk. A revised modeling demonstration is not required.

VI. Other Regulatory Requirements

- An application fee of \$922.00 is required and was received by DAQ.
- The appropriate number of application copies was received on April 8, 2016.
- A Professional Engineer's Seal is not required for this application.
- Receipt of the request for a zoning consistency determination was acknowledged by Chip Crumpler,
 Wayne County Planning Dept., on April 8, 2016. The proposed operation is consistent with applicable zoning ordinances.

- Public notice is not required for this 1st Step of a significant modification under 15A NCAC 02Q .0501(c)(2).
- IBEAM Title V Equipment Editor (TVEE) update was verified on June 27, 2016.
- According to the application, the facility does not handle any of the substances subject to 112(r) at quantities greater than the applicability threshold.
- The application was signed by Mr. Michael Golden, Plywood Plant Manager, on April 6, 2016.

VII. Recommendations

This permit application has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is expected to achieve compliance as specified in the permit with all applicable requirements. The applicant and WARO were provided a draft permit on June 24, 2016. The WARO responded with no comments. The applicant responded on July 15, 2016 with comments that could not be addressed with this modification. DAQ recommends permit issuance.